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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,130	10/20/2003	Erik J. Shahoian	IMM151	3894

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PATENT DEPARTMENT (51851)
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EXAMINER	
HOLTON, STEVEN E	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/689,130	SHAHOIAN ET AL.	
	Examiner	Art Unit	
	Steven E. Holton	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 May 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7-2-04/ 3-10-04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 5, elements 506a and 506b. The Examiner notes that paragraph 46 of the specification refers to the end stops as elements 606a, b. This appears to be a typographical error, changing this to be 506 would overcome the objection. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 8 recites the limitation "the motor" in line 2. There is insufficient antecedent basis for this limitation in the claim. The Examiner notes that claim 8 as written is dependent on claims 5 and 6 which recite the actuator being an E-core actuator rather than a motor which is presented in claims 7 and 9. Claim 8 appears to be merely dependent on wrong claim as the end-stops described in claim 8 appear to be part of the embodiment described in Fig. 5 involving a rotating mass as described by claim 9.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, 7, and 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenberg et al. (USPN: 6128006), hereinafter Rosenberg.

Regarding claims 1, 4, 14 and 17 the Examiner notes that these are drawn to a device, related method of operation and related computer storage medium with computer code; therefore, the claims are considered together.

Regarding claims 1, 14 and 17, Rosenberg discloses, "receiving an input signal; and generating an output signal configured to cause a rotational force on a touch-sensitive input device in response to the input signal (col. 8, lines 15-27)". The Examiner notes that the mouse wheel operates based on the touch of the user to provide input to the wheel and is therefore, touch-sensitive.

Regarding claims 4, 15 and 18, Rosenberg discloses generating rotational force within a limited range of motion (col. 21, lines 33-37). The Examiner notes that the hard stop force would produce a limited range of motion for the rotational force.

Regarding claim 7, Rosenberg discloses providing a motor (Fig. 7, element 112) and a drive belt (Fig. 7, element 138) driven by the motor to produce the rotation force on the input device.

Regarding claim 12, Rosenberg discloses a housing that holds the actuator (Fig. 5, element 112). The Examiner notes that the actuator is described as being grounded but does not specify where it is grounded. The figures show that the actuators are held inside of the mouse (Fig. 4, element 31 is the mouse, actuator elements 112 and 106 are inside of the mouse), which would mean that the actuators are grounded to the body of the mouse.

Regarding claim 13, Rosenberg discloses a processor configured to receive an output signal from the input device and generate signals to cause the actuator to produce the rotational force (col. 8, lines 15-27). The host computer (Fig. 1, element 18) possesses a processor that is used to generate signals to the actuators.

Regarding claims 16 and 19, Rosenberg discloses generating pop sensation to the touch-sensitive input device (col. 18, lines 60 – 64).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 3, and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Shahoain et al. (USPgPub: 2002/0033795), hereinafter Shahoain.

Regarding claim 2, as discussed above Rosenberg discloses all of the limitations except, "wherein the touch-sensitive input device comprise a touchpad."

Shahoain discloses a touchpad input system provided with haptic feedback (col. 1, lines 65-66).

At the time of invention it would have been obvious to one skilled in the art that the rotational feedback could described by Rosenberg could be applied to a touchpad or other input devices. Rosenberg shows that the axis of orientation can be changed as depending on the input device used (Figs. 3A and 3B). Shahoain shows a touchpad that is movable in the X, Y and Z directions by providing necessary systems to move the touchpad in such a direction. It would have been a matter of design choice for one skilled in the art to apply haptic feedback in a rotational or linear direction based on the

type of movement desired with the input device. Thus, it would have been obvious at the time of invention to apply rotational haptic feedback as described by Rosenberg to a touchpad input device as shown by Shahoain to produce the device as described in claim 2.

Regarding claim 3, the Examiner notes that the shape of the touchpad would be a matter of design choice to one skilled in the art depending on the location and use of the touchpad.

Regarding claim 8, the rejection is based on the claim as interpreted by the Examiner to overcome the 112 rejection previously mentioned. Shahoain discloses a flexure driven actuator and motor system that also provides stops to limit the motion of the flexures (paragraph 91, lines 11-13).

Regarding claim 9, Shahoain discloses an actuator using an eccentric rotation mass to provide haptic feedback (paragraph 92, lines 4-6).

Regarding claim 10, Shahoain discloses providing a flexure driven actuator with motor (paragraph 91).

Regarding claim 11, the Examiner states that the use of a flexure of brass would be a design choice for one skilled in the art. The flexure would be made of a suitable material to provide the necessary motion, strength, resiliency, or other properties needed to operate the device. The type of material chosen would be a design choice option.

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg as applied to claim 1 above, and further in view of Rosenberg et al. (USPN: 6211861), hereinafter the '861 patent.

As discussed above Rosenberg (the '006 patent) discloses all of the limitations of except "wherein the touch-sensitive input device further comprises a magnet, and wherein the actuator comprises a magnetic core."

The '861 patent describes a magnetic core actuator for providing haptic feedback that is able to produce rotational motion (Fig. 3b, element 70; col. 10, lines 15-23).

At the time of invention it would have been obvious to one skilled in the art to combine the teachings of Rosenberg with the '861 patent to produce the device as described in claim 5. The motivation for doing so would have been a matter of design choice based on the type of motor/actuator desired to produce rotation feedback force. Therefore, it would have been obvious to one skilled in the art that the rotational feedback input device described by Rosenberg could be combined with a rotational motion actuator as described in the '861 patent to produce the device described in claim 5.

Regarding claim 6, the '861 patent describes the magnet actuator as being an E-core actuator (col. 10, lines 15-19).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Good et al. (USPN: 5185561) discloses rotational haptic feedback for a knob input device. Carlson et al. (USPN: 6283859) discloses rotational haptic feedback for an input device.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven E. Holton whose telephone number is (571) 272-7903. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven E. Holton
Division 2629
June 7, 2006

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